

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group IV, Claims 30-42 in the reply filed on 24 August 2010 is acknowledged. The traversal is on the ground(s) that the search and examination of the entire application would not place a serious burden on the Examiner. This is not found persuasive because the groups of inventions listed in the Requirement for Restriction/Election do not relate to a single general inventive concept under PCT Rule 13.1. The common technical feature among the groups is a roll. Since a roll is known in the art (for example, see Fig. 1, #104 of U.S. Patent 6,170,293), there is lack of unity a posteriori. Furthermore, applicants' attention is drawn to the fact that the restriction requirement was NOT based on distinct classification of different inventions and therefore applicants' argument that all subclasses can be searched without substantial additional effort is apparently without merits. The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 40 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. As written, claim 40 appears to claim that "the conveying roll

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is that of a tunnel furnace", which is not readily ascertainable. Appropriate clarification and/or correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 30, 33 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by GB 2 044 133 A to Stopps.

6. Stopps discloses a method for cleaning a horizontal roll about its axis (Abstract and Fig. 1) using a cleaning device configured to be displaced along the roll by sliding (page 1, lines 56-64) and that cleans the surface of the roll in the course of its sliding by a cleaning means fastened to the cleaning devices (page 1, lines 68-73), wherein the cleaning device is carried and guided by the roll independently of another roll (Fig. 1 and page 2, lines 14-29) and includes a means for preventing following the roll in its rotation (page 1, lines 126-130).

7. Regarding claim 33, Stopps discloses the cleaning means including a cutting tool (page 1, lines 98-100 where free edge may be in form of a knife-edge to improve scraping efficiency).

8. Regarding claim 34, Stopps discloses that the cutting tool is carried by a block acting as a surface contacting with the roll to be cleaned (page 2, lines 18-29).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over GB 2 044 133 A to Stopps.

12. Stopps is relied upon as discussed above with regard to the rejection of claim 30.

13. Regarding claim 31, Stopps discloses that the scraping edge conforms to at least a circumferential portion of the roll surface and that the scraping assembly may include a *plurality* of segment-like scraping members the respective arcuate scraping edges thereof being sequentially disposed around the roll surface in a plane substantially normal to the longitudinal axis of the roll (page 1, lines 68-80). Furthermore, Stopps discloses that the scraping member can be in the form of an annular ring that is discontinuous (split) to facilitate removal from around the roll surface (page 1, lines 80-

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85). Stopps also shows an embodiment in which the upper surface of the roller is contacted with two blades (Fig. 1, #19 which contains two blades along the upper surface of the roller). In addition, Stopps shows an embodiment in which the two blades are connected via a link under the roll (Fig. 1, #19 extends to underneath the roller).

14. Stopps does not explicitly disclose that the surfaces serve both for carrying the cleaning device as Stopps shows the rod #15 in Fig. 1 as extended above the cleaning roller. However, one of ordinary skill in the art would understand that the rod could be located above, below, or adjacent to the cleaning roller, so long as the rod was substantially parallel to the longitudinal axis of the roll (see page 2, lines 24-25) because choosing from a finite number of predictable solutions is prima facie obvious.

15. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over GB 2 044 133 A to Stopps in view of U.S. Patent No. 3,481,727 to Dickinson et al.

16. Stopps is relied upon as discussed above with regard to the rejection of claim 30.

17. Regarding claim 32, Stopps does not explicitly disclose an arm passing under a roll adjacent to be cleaned in order to prevent entrainment.

18. Dickinson discloses a cleaning tool for conveyor rollers in which the entrainment of the cleaning tool is prevented by having two arms press against the adjacent roller (see Fig. 2). It would have been obvious to one of ordinary skill in the art to modify the cleaning tool of Stopps to use an arm to press against an adjacent roller to prevent entrainment as suggested by Dickinson by using a lower arm (Dickinson Fig. 2, #19) to prevent rotation of the cleaning too.

19. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over GB 2 044 133 A to Stopps in view of U.S. Patent No. 4,042,364 to King et al.

20. Stopps is relied upon as discussed above with respect to the rejection of claim 30.

21. Stopps does not explicitly disclose that the cleaning means includes a wire brush driven in rotation by a motor.

22. King discloses a roll cleaning method which utilizes a wire brush driven in rotation by a motor. It would have been obvious to one of ordinary skill in the art to modify the cleaning method disclosed by Stopps to include a brush driven by a motor as disclosed by King in order to improve remove uneven crusty deposits and burnish the surfaces to restore the roll surfaces to substantially their original finish (King at col. 2, lines 31-34).

23. Claims 36-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 2 044 133 A to Stopps in view of U.S. Patent No. 6,170,293 to Cody.

24. Stopps is relied upon as discussed above with respect to the rejection of claim 30.

25. Stopps does not explicitly disclose that the cleaning method can be used on conveying rolls, such as the rolls described in Cody. It would have been obvious to one of ordinary skill in the art to modify the cleaning method disclosed by Stopps to apply it to the cleaning of glass conveying rolls as disclosed by Cody because the advantages

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of Stopps, such as efficient removal of debris accumulated on a roll surface of a roll similar to the rolls used in the glass conveying process (Stopps at page 1, lines 24-41 and page 3, lines 48-55).

26. Regarding claim 36, Cody discloses that the roll is a conveyor roll (col. 1, line 50).

27. Regarding claim 37, Cody discloses that the roll conveys plates (read as sheets) (col. 1, line 37).

28. Regarding claim 38, Cody discloses that the roll conveys glass (col. 1, line 50).

29. Regarding claim 39, Cody discloses that the roll conveys plates (read as sheets) or a strip (read as ribbon) (col. 1, lines 37 and 50).

30. Regarding claim 40, as discussed above, the claim is indefinite as to the claimed subject matter. Examiner is interpreting the claim to mean that the conveying roll is used in a tunnel furnace. Cody discloses that the conveying roll is used in a tunnel furnace (read as lehr) (col. 1, line 50).

31. Regarding claim 41, Cody discloses that the roll is used in a glass-conveying operation. While the combination of Stopps and Cody does not explicitly disclose that the roll is cleaned during the glass-conveying operation, Stopps discloses that the rotation of the roll during the cleaning operation may be effected by the normal drive mechanism (Stopps at page 2, line 67-69). It would have been obvious to one of ordinary skill in the art to perform the cleaning operation during the glass-conveying operation as disclosed by Stopps in order to minimize downtime of the operation (see Stopps at page 1, lines 24-41).

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32. Regarding claim 42, Cody discloses that the conveying roll is used in a tunnel furnace during a glass-conveying operation (col. 1, line 50). While neither Cody nor Stopps explicitly disclose removal of a sodium-sulfate deposit, it is inherent that a lehr used in a glass process would produce sodium sulfate skin on the glass surface and that the sodium sulfate skin would be deposited onto the rolls (see Applicant's Specification at page 1, lines 12-18).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DOUGLAS LEE whose telephone number is (571)270-3296. The examiner can normally be reached on Mon.- Thurs. 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Kornakov can be reached on 571-272-1303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DOUGLAS LEE/

Examiner, Art Unit 1714

/Michael Kornakov/

Supervisory Patent Examiner, Art Unit 1714